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Albuquerque, New Mexico 87107

The geology of, and known mineral occurrences within, Wilderness Study Area 4-60 Vanar Hills - Peloncillo Mountains

by
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Safford, Arizona 85546
(Mr. Ron Loomis)

February 6, 1982

contents:

Interpretations and conclusions in this report are those of the consultant and do not necessarily coincide with those of the staff of the Bureau of Geology and Mineral Technology.

Brief summary of geological features and known mineral occurrences

Wilderness Study Area 4-60
Vanar Hills - Peloncillo Mountains

1) The entire WSA is underlain by either middle Tertiary volcanics, or by late Tertiary-Quaternary basin-fill (sand, gravels, etc.). Volcanic rocks consist primarily of rhyolitic and quartz-latitic flows, vitric tuffs, and breccias;

2) There are no known base or precious metal occurrences within the boundaries of, or bordering, the WSA;

3) One known manganese deposit lies to the south of the WSA in middle Tertiary andesite. Development and production data are unavailable for this exploration prospect;

4) Several geothermal areas are located to the southwest of the WSA in Tertiary-Quaternary basin-fill of the San Simon Valley. Information concerning development and production could not be obtained;

5) Known mineral occurrences to the north of the WSA are situated in the vicinity of Duncan. Sand, gravel, and diatomaceous earth deposits have been stripped and quarried from alluvial fans and terraces along the Gila River. The Arizona Department of Transportation currently operates sand and gravel quarries to the north and south of Duncan. Diatomaceous earth deposit workings are presently inactive;

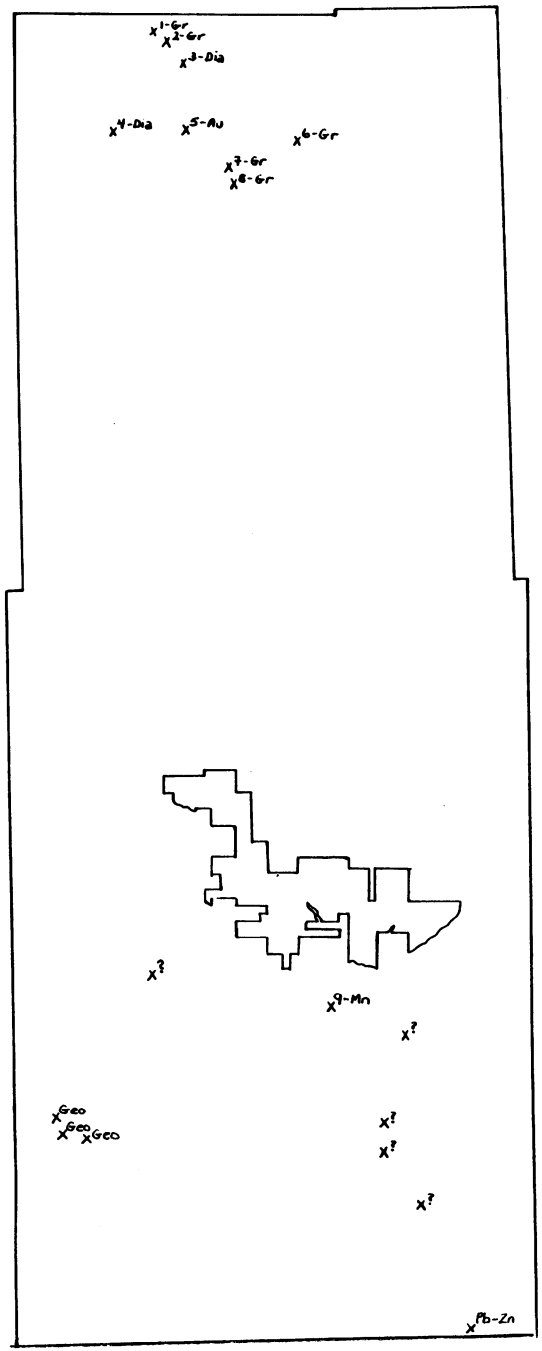
6) Gold occurs in the Duncan area, within well-defined fissure veins cutting Tertiary lava flows. Substantial amounts of gold ore were extracted during the late 1800's. Minor amounts of copper, zinc, silver, and lead ore were encountered during the early 1900's; however, no production was reported;

7) Several mines and prospects are located to the south of the WSA, in the Steins Mountain - Steins Peak region of New Mexico. Information regarding these operations is largely unavailable. Gillerman (1958; see enclosed article, pages 95-97) describes the McGhee Mine, located in the southeast corner of the mapped area, as a lead-zinc mining operation that produced 100,000 tons of ore prior to 1955;

8) The Steins Pass Mining District, to the southeast of the WSA in New Mexico, has been actively mined and prospected since the late 1800's. Most of the mining activity occurred prior to 1920; later operations have been sporadic, and most of the older properties are presently inaccessible.
Lead, zinc, copper, and silver, in the form of galena, sphalerite, and chalcopyrite, are the most abundant ore metals in this region. Small deposits of gold and tungsten have also been mined. Trace amounts of fluorspar have been reported.

9) The Peloncillo Mining District, geologically and mineralogically similar to the Steins Pass district, lies just across the state border in Arizona and includes the Vanar Hills region. The few known ore bodies tend to be small, sporadic, and widely disseminated. Old prospecting activities uncovered small and weak showings of oxidized copper ore; only a few test lots of ore were produced. According to Keith (1973; "Index of Mining Properties in Cochise County, Arizona"), "The possibilities for economic mineralization in this district are not favorable."

For additional discussions of the mineral potential of the Steins Pass - Peloncillo Mountains region, see Gillerman (1958).



EXPLANATION

Known mineral occurrences are located by map number, followed by type of mineral deposit. See accompanying table of mineral occurrences.

x^{Au} gold; associated lead, silver, zinc, and copper minerals

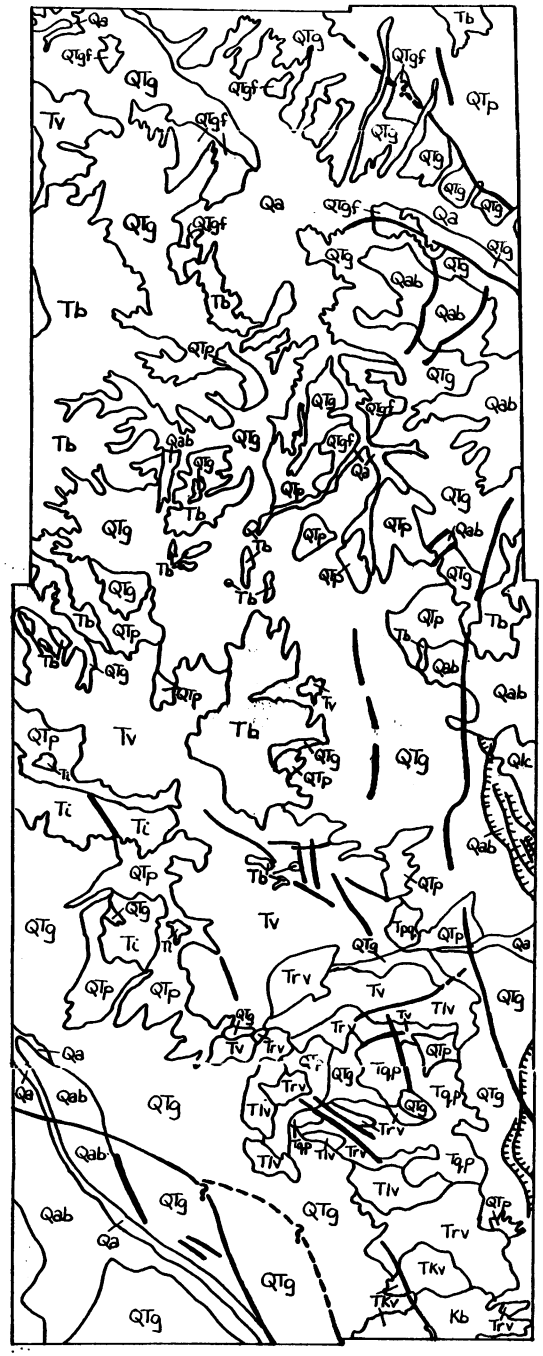
x^{Dia} diatomaceous earth deposits

x^{Geo} geothermal areas

x^{Mn} manganese; psilomelane

$x^{?}$ unknown mineral types

x^{Pb-Zn} lead-zinc; minor amounts of silver



EXPLANATION

QUATERNARY

- **Qlc** — Clay and water soluble salts devoid of vegetation; marginal parts of the barren ground contain considerable silt and sand.
- **Qa** — Younger alluvium; unconsolidated silt, sand, and gravel on active flood plains and in stream channels.
- **Qab** — Extensive, broad, low-gradient alluvial fans that are largely inactive and generally dissected by erosion.

QUATERNARY-TERTIARY

- **QTg** — Weakly- to well-indurated conglomerate, fanglomerate, and breccia capping low terraces and ridges.
- **QTp** — Older alluvium and colluvium; coarse pediment gravel, sand, and silt of older valley fill.
- **QTgf** — Gila Conglomerate; small benches and nearly perpendicular bluffs of terrace gravels and boulders, interbedded with layers of semi-indurated sand and sheets of basalt.

TERTIARY

- **Tlv** — Vanar Hills volcanic rocks; latitic flows, vitric tuffs, crystal tuffs and pitchstone.
- **TqP** — Steins Mountain quartz latite porphyry; columnar jointed flows and devitrified tuffs.
- **Trv** — Quarry Peak rhyolite complex; flows and well-bedded breccias and tuffs of rhyolitic composition.
- **Tb** — Basalt and basaltic andesite flows and pyroclastic deposits.
- **Tv** — Rhyolite welded ash-flow tuffs and coarse-grained porphyritic andesite flows.
- **Ti** — Intrusive rocks, including granitic plutons and aphanitic to porphyritic plugs and dikes.

TERTIARY-CRETACEOUS

- **TKv** — Flows, tuffs, breccias, and volcanic conglomerates of andesitic to rhyolitic composition.

CRETACEOUS

- **Kb** — Bisbee Formation; interbedded sandstone, shale, and limestone, with basal conglomerate unit.

contact

fault, dashed where inferred or covered

ancient shorelines of Lake Animas; erosional and evaporation features

Sources of information include:

Arizona Bureau of Mines, 1959
Gillerman, E., 1978
Wilson, E.D. and R.T. Moore, 1958
Wynn, J.C., 1981

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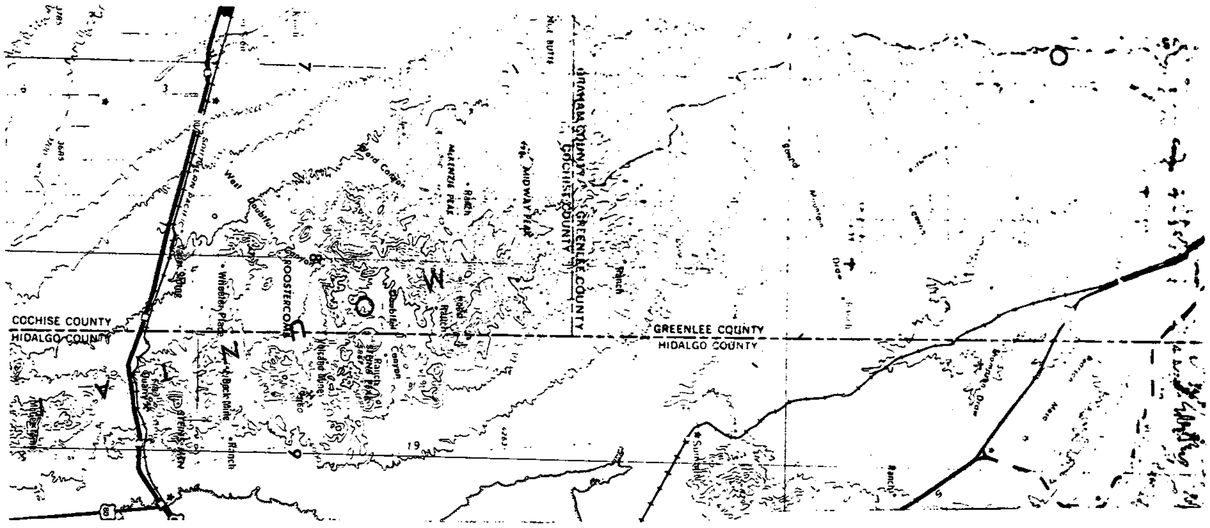
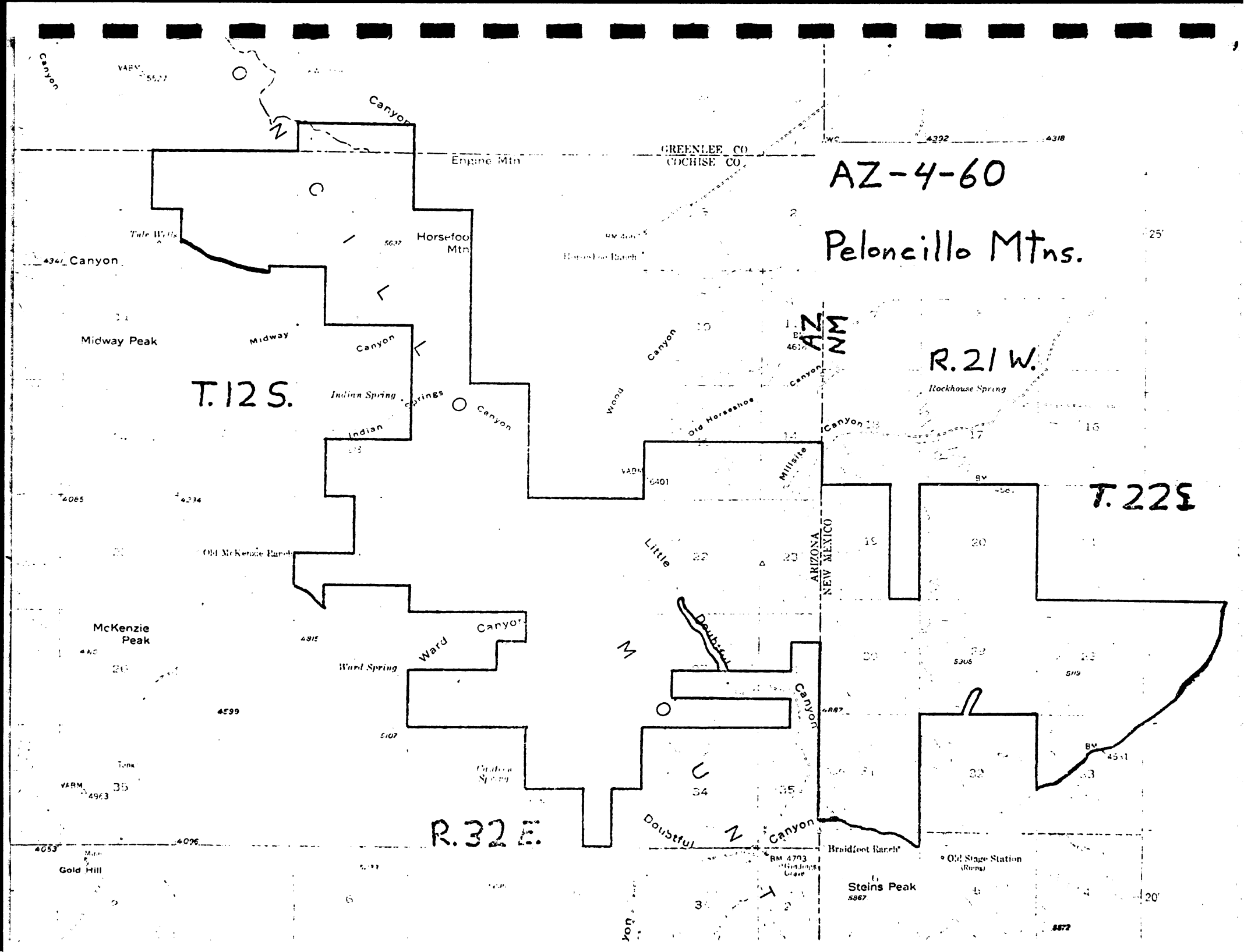
MOUNTAINS AREA (4-60)


COCHISE COUNTY
HIDALGO COUNTY
GREENLEE COUNTY
HIDALGO COUNTY
GREENLEE COUNTY
COCHISE COUNTY


AZ-4-60
Peloncillo Mtns.
GREENLEE CO.
COCHISE CO.
Engine Mtn
Horsefoot Mtn
Midway Peak
Midway Canyon
Indian Springs Canyon
Indian Spring
Old McKenzie Ranch
McKenzie Peak
Ward Canyon
Ward Spring
Graham Spring
Gold Hill
Wood Canyon
Old Horseshoe Canyon
Millsite
Rockhouse Spring
Little Doubtful Canyon
Doubtful Canyon
Braidfoot Ranch
Old Stage Station (Ruins)
Steins Peak
ARIZONA
NEW MEXICO
AZ
NM
T. 12 S.
T. 22 S.
R. 21 W.
R. 32 E.

KNOWN MINERAL OCCURRENCES

PELONCILLO MOUNTAINS AREA (4-60)

Gold, Manganese, Diatomite, and Gravel Deposits

The Vanar Hills region of the central Peloncillo Mountains is primarily composed of middle Tertiary rhyolite flows, vitric tuffs, and breccias. The lower slopes of the mountains are blanketed by older alluvial deposits of poorly sorted coarse gravel; ancient lake deposits of interbedded fine sand and clay, ranging from 10 to 20 feet thick; and younger alluvial deposits of unsorted and unconsolidated sand and gravel, characteristic of the Animas and San Simon valleys. Northwest-striking high-angle faults are numerous within the mountain uplands and divide the range into a number of variously tilted, diagonally-trending fault blocks. Intensive folding during late Tertiary-Quaternary times created an upbowing in the central part of the range, known as the Peloncillo Arch.

Map numbers 5 and 9 represent two known metalliferous mineral occurrences in this region. Map number 5 contains a small gold deposit; minor amounts of gold, in association with silver, copper, lead, and zinc are contained in well-defined fissure veins cutting Tertiary lava flows. Map number 9 locates a manganese deposit. Manganese minerals have been reported from faulted Tertiary andesitic rocks on the eastern slopes of the Peloncillo Range.

Numerous gravel and sand quarries lie to the west and east of the Peloncillo Mountains, in the Animas and San Simon valleys (map numbers 1,2,6,7,8).

Diatomite deposits (map numbers 3,4) have been stripped and quarried from outcrops along the Gila River north of Duncan. Diatomite beds are found interbedded with clay in the Pliocene-Pleistocene Gila Formation.

Lead, zinc, copper, and silver are reported as being the most abundant ore minerals in the Peloncillo Mountains (Gillerman, 1958). For a discussion of mineral occurrences to the north and south of the Vanar Hills region, see Gillerman.

Map No.: 4-60-1

Mine: ADOT Gravel Pit

Location:	T. 08S	Sec. 03	Lat. 32-46-00N
	R. 31E	C E 1/2	Long. 109-09-16W
Geology:			Elev. 3600 Ft.

Coarse gravel, sand, and silt covering floodplains, terraces, pediments, and low ridges in Gila River basin (late Tertiary-Quaternary).

Mineral Products: Sand and gravel

Development and Production: Surface workings; active producer.

References:

USBM Files, ADOT Gravel P. 4
USGS York Valley Quad (1:62500)
Wynn, 1981

Map No.: 4-60-2

Mine: ADOT Gravel Pit

Location: T. 08S Sec. 02 Lat. 32-46-00N
R. 31E SWSWSW Long. 109-08-34W
Geology: Elev. 3680 Ft.

Coarse gravel, sand, and silt covering floodplains, terraces, pedimetns, and low ridges in Gila River basin (late Tertiary-Quaternary). Thickness several meters to hundreds of meters thick. Weakly-to well-indurated, poorly rounded clasts.

Mineral Products: Sand and gravel

Development and Production: Surface workings; active producer.

References:

USBM Files, ADOT Gravel Pit
USGS York Valley Quad (1:62500)
Wynn, 1981

Map No.: 4-60-3

Mine: Stephens Diatomite
(Duncan Diatomaceous Earth Deposits)

Location: T. 08S Sec. 12 Lat. 32-45-00N
R. 31E Cen. Long. 109-07-38W
Elev. 3680 Ft.

Geology:

3-10 Ft. thick horizontal diatomite bed interbedded with clay in Gila Formation (Pliocene-Pleistocene). Covered with 1-4 Ft. of overburden. 2 deposits, 3.-3.5 miles north of Duncan; light-colored diatomaceous strata crop out in low cliffs north of Gila River.

Mineral Products: Diatomite

Development and Production: Surface workings; presently inactive. Property comprises 170 acres. Owned by Elmer Stephens (as of 1959).

References:

USBM Files, Stephens Diatomite
USGS Duncan Quad (1:62500)
ADMR Stephens Diatomite File
Elevatorski, 1978, p. 34

Map No.: 4-60-4

Mine: Diatomite Prospect

Location: T. 08S, R. 31E; Sec. 22, C W 1/2; Lat. 32-43-20N, Long. 109-10-00W, Elev. 3980 Ft.

Geology:

Diatomaceous earth deposits alternating with beds of clay in Gila Formation.

Mineral Products: Diatomite

Development and Production: Surface workings; extent of development unknown. Past producer.

References:

USGS Duncan Quad (1:62500)
USBM Files, Diatomite Prospect
Elevatorski, 1978, p. 34

Map No.: 4-60-5

Mine: Carlisle Mine (Carslile, Carlyle, Southwestern Minerals Co. Property)

Location: T. 08S Sec. 24 Lat. 32-43-17N
R. 31E C W 1/2 Long. 109-07-50W
Geology: Elev. 4000 Ft.

Ore minerals in well-defined fissure veins cutting Tertiary lava flows. Lavas in region are primarily andesites with some basalt and rhyolite volcaniclastic tuffs and flows. Stocks and dikes of younger granite and quartz porphyries traverse country rock, generally trending NW-SE. Fissure veins tend to parallel dikes.

Mineral Products: Gold
Silicon
Silver
Calcite:Calcium
Copper
Lead
Zinc

Development and Production: Underground operations; presently inactive. Development included several shafts with maximum depth of over 700 Ft., 1100 Ft. of drifts. Carlisle Mine patented in 1882; substantial amounts of gold ore extracted between 1882 and 1897. Mine was abandoned between 1897 and 1916, when Southwestern Minerals Co. reopened workings for lead-silver-zinc exploration.

References:

USBM Files, Carslile
USGS Duncan Quad (1:62500)
ABGMT Clippings, Carlyle Mines
ADMR Twin Peaks Mining and Milling Co. File

Map No.: 4-60-6

Mine: Gravel Pit

Location: T. 08S, R. 32E; Sec. 27, C W 1/2; Lat. 32-42-43N, Long. 109-03-49W, Elev. 3760 Ft.

Geology:

Coarse gravel, sand, and silt covering floodplains, terraces pediments, and low ridges in Gila River basin (late Tertiary-Quaternary).

Mineral Products: Sand and gravel

Development and Production: Surface workings; extent of development and production unknown.

References:

USBM Files, Gravel Pit
USGS Duncan Quad (1:62500)
Wynn, 1981

Map No.: 4-60-7

Mine: Gravel Pit

Location: T. 08S, R. 32E; Sec. 30, SW of NE; Lat. 32-42-46N, Long. 109-06-11W, Elev. 3760 Ft.

Geology:

Coarse gravel, sand and silt covering floodplains, terraces, pediments, and low ridges in Gila River basin (late Tertiary-Quaternary).

Mineral Products: Sand and gravel

Development and Production: Surface workings; extent of development and production unknown.

References:

USBM Files, Gravel Pit
USGS Duncan Quad (1:62500)
Wynn, 1981

Map No.: 4-60-8

Mine: Gravel Pit

Location:	T. 08S	Sec. 30	Lat. 32-42-14N
	R. 32E	C S 1/2	Long. 109-06-25W
Geology:			Elev. 3800 Ft.

Coarse gravel, sand, and silt covering floodplains, terraces, pediments and low ridges in Gila River basin (late Tertiary-Quaternary).

Mineral Products: Sand and gravel

Development and Production: Surface workings; extent of development and production unknown.

References:

USBM Files, Gravel Pit
USGS Duncan Quad (1:62500)
Wynn, 1981

Map No.: 4-60-9

Mine: Black Face

Location: T. 13S Sec. 11 Lat. 32-18-51N
R. 32E Long. 109-03-00W
Elev. 4600 Ft.

Geology:

Claim located on middle Tertiary andesite flow associated with the San Simon-Central Peloncillo Mountain region. Local geologic information unavailable. Manganese occurs as fracture-filling mineral.

Mineral Products: Manganese:Psilomelane

Development and Production: Exploration prospect; extent of development and production unknown.

References:

USBM Files, Black Face
USGS San Simon Quad (1:62500)
ABM, 1959

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Greenlee Cty., AZ

The geology of, and known mineral occurrences within, Wilderness Study Areas 4-22/23/24 A and B Turtle Mountain - Gila Box

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February 18, 1982

contents:

Brief summary of geological features and known mineral occurrences

Wilderness Study Areas 4-22/23/24 A and B
Turtle Mountain - Gila Box

1) The Turtle Mountain - Gila Box region is underlain by late Tertiary-Quaternary age sedimentary deposits and volcaniclastic flows. The majority of these flows and related pyroclastic rocks consist of massive andesites and basaltic andesites;

2) There are no known base or precious metal occurrences within the Turtle Mountain - Gila Box WSA's. Two geothermal areas border, or lie just within, the eastern boundary of the appealed area adjacent to the WSA's. The Cillard Hot Springs claims, located along the Gila River, have not reported any mineral production. The Gila Hot Springs claim group to the east reported manganese and barite occurrences. These claims have been abandoned several times since their location in the mid-1900's, and no production has been recorded;

3) A third geothermal area lies near the northeastern border of WSA 4-22/23/24 A. Extent of development and production are unknown;

4) Two large porphyry copper deposits are located to the northeast and southwest of the WSA's, near Morenci and Safford. East of Eagle Creek, ore deposits occur as replacements of sedimentary rocks, as disseminations in monzonite porphyry, and as fault fissure veins associated with a complex system of NE-trending shear zones. Copper and gold prospects were first located in 1870 and were actively mined until the mid-1930's, coincident with the beginning of Morenci open-pit operations.

To the southwest of the WSA's, in the vicinity of Safford, porphyry copper and associated vein deposits are contained in small granodiorite plutons. Between Safford and Turtle Mountain, disseminated copper occurs within fissure

systems cutting andesite and basaltic andesite flows. Information regarding mining activity and production is largely unavailable for the smaller mines that operated between 1900 and the late 1940's. With the exception of the Kennecott-Safford operations, the majority of these claims and prospects are inactive;

5) Large, irregular deposits of silver occur within Paleozoic sediments in the Clifton-Morenci area. Silver, associated with gold and copper minerals, was mined until the mid-1900's, when the larger deposits were exhausted;

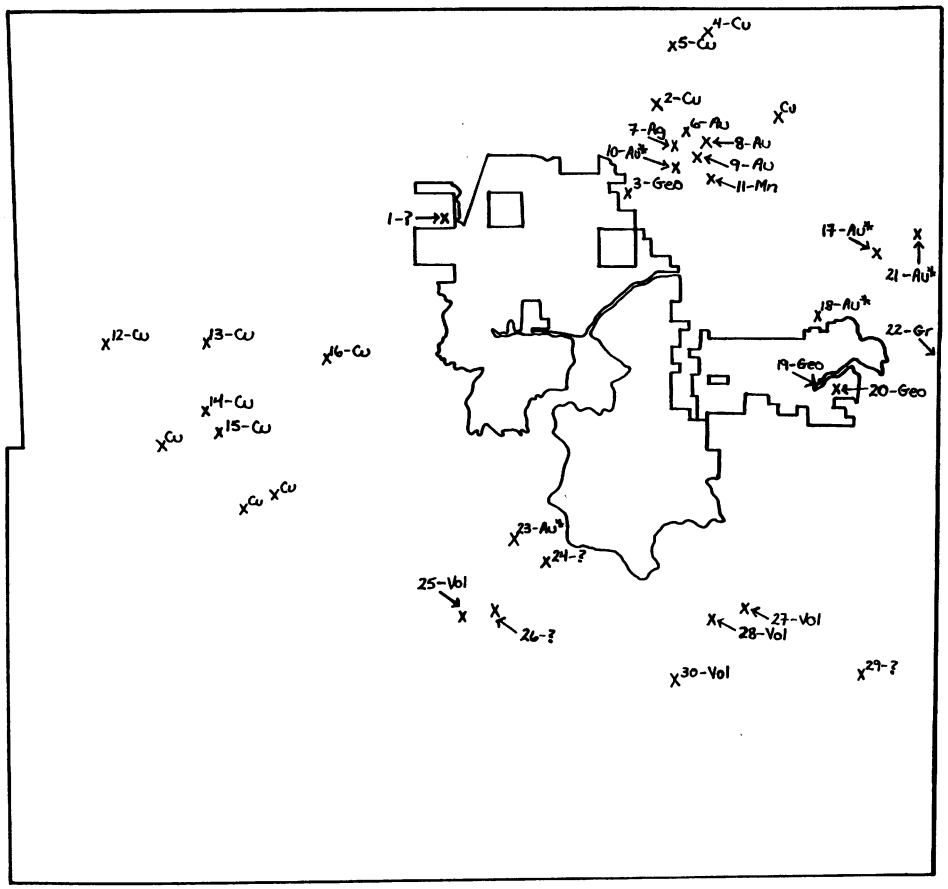
6) Gold lode deposits are located to the east and west of the WSA's, in well-defined fissure vein systems cutting limestone and volcanic rocks. Gold mining produced small amounts of ore between the late 1800's and mid-1900's, when the known deposits were depleted;

7) Gold placer deposits occur in sediments capping terraces of Gila Conglomerate that border the San Francisco and Gila rivers. Free-milling operations exhausted the known concentrations of placer gold by 1905;

8) Manganese oxides are associated with barite and placer gold deposits found in shear zones dissecting Gila Conglomerate and quartz monzonite porphyry in the Morenci area. There are no records of production from the two known manganese deposits within this region;

9) Volcaniclastic sedimentary basin-fill deposits south of the WSA have been surface mined since the mid-1900's for their pumicite, cinder, gravel, and perlite content. Production data are unavailable.

For additional discussions of the mineral potential of the Turtle Mountain - Gila Box region, as well as the adjacent Copper Mountain - Morenci and Lone Star - Safford mining districts, see Lindgren (1905), and Robinson and Cook (1966).

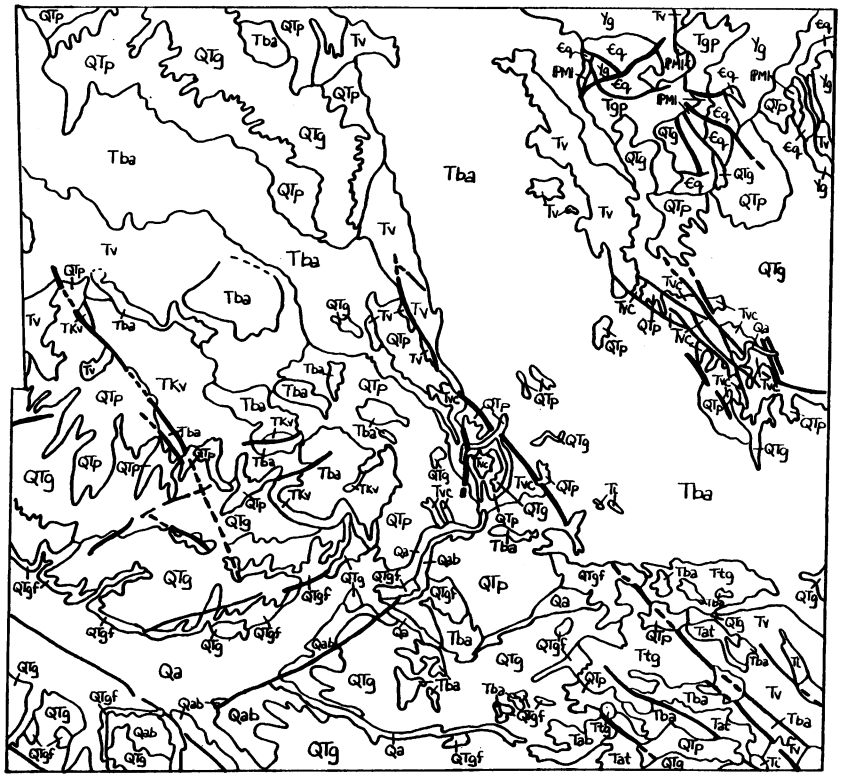


MINERAL OCCURRENCES IN THE TURTLE MOUNTAIN-GILA BOX AREA (4-22/23/24 - A,B)

EXPLANATION

Known mineral occurrences are located by map number, followed by type of mineral deposit. See accompanying table of mineral occurrences.

- x^{Cu} copper; associated silver, zinc, gold lode, gold placer, lead, and manganese
- x^{Ag} silver; associated gold and copper
- x^{Au} gold lode
- x^{Au*} gold placer
- x^{Mn} manganese; pyrolusite and wad
- x^{Geo} geothermal areas
- x^{Vol} volcanic cinder, pumice, pumicite
- x^{Gr} gravel and sand
- x$^{?}$ unknown mineral types



GEOLOGY OF THE TURTLE MOUNTAIN - GILA BOX AREA
(4-22/23/24-A,B)

EXPLANATION

QUATERNARY

- **Qa** — Younger alluvium; unconsolidated silt, sand, and gravel on active flood plains and in stream channels.
- **Qab** — Broad, low-gradient alluvial fans that are largely inactive and generally dissected by erosion.

QUATERNARY-TERTIARY

- **QTg** — Weakly- to well-indurated conglomerate, fanglomerate, and breccia capping low terraces and ridges.
- **QTp** — Older alluvium and colluvium; coarse pediment gravel, sand, and silt of older valley fill.
- **QTgf** — Gila Conglomerate; small benches and nearly perpendicular bluffs of terrace gravels and boulders, interbedded with layers of semi-indurated sand and sheets of basalt.

TERTIARY

- **Tvc** — Remnant cinder cones, pyroclastic cone debris and flows.
- **Tat** — Andesite cinder cones; locally unconsolidated, glassy, and scoriaceous lapilli and and coarse-grained ash with some intercalated thin flows.
- **Tba** — Andesite and basaltic flows of Turtle Mountain - Guthrie Peak; locally includes beds of volcanic boulder conglomerate.
- **Tv** — Rhyolite welded ash flow tuff and coarse-grained porphyritic andesite flows.
- **Ttg** — Pyroclastic air-fall and volcaniclastic sedimentary deposits; includes pebbly, lithic-pumice sandstone and locally, massive and poorly sorted volcanic boulder conglomerate beds.
- **Ti** — Intrusive rocks, including granitic plutons and aphanitic to porphyritic plugs and dikes.
- **Tgp** — Morenci granite-quartz monzonite-diorite porphyry complex.

TERTIARY-CRETACEOUS

- **TKv** — Flows, tuffs, breccias, and volcanic conglomerates of andesitic to rhyolitic composition.

CARBONIFEROUS-DEVONIAN

- **PMl** — Fine-grained fossiliferous limestone and shale; Modoc, Morenci and Longfellow formations.

CAMBRIAN

- **Eq** — Coronado Quartzite; quartzite sandstone with basal conglomerate unit.

PRECAMBRIAN

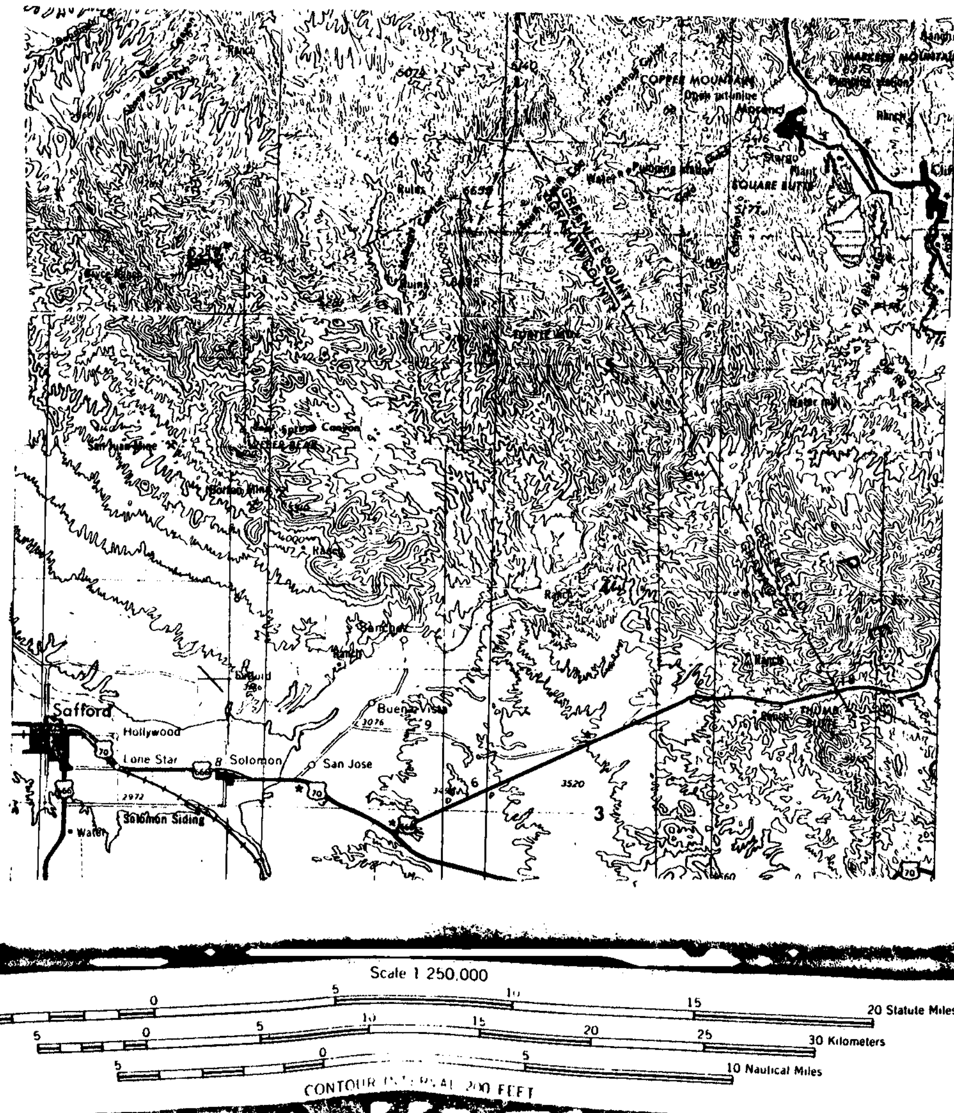
- **Yg** — Medium- to coarse-grained granitic rocks, commonly porphyritic.

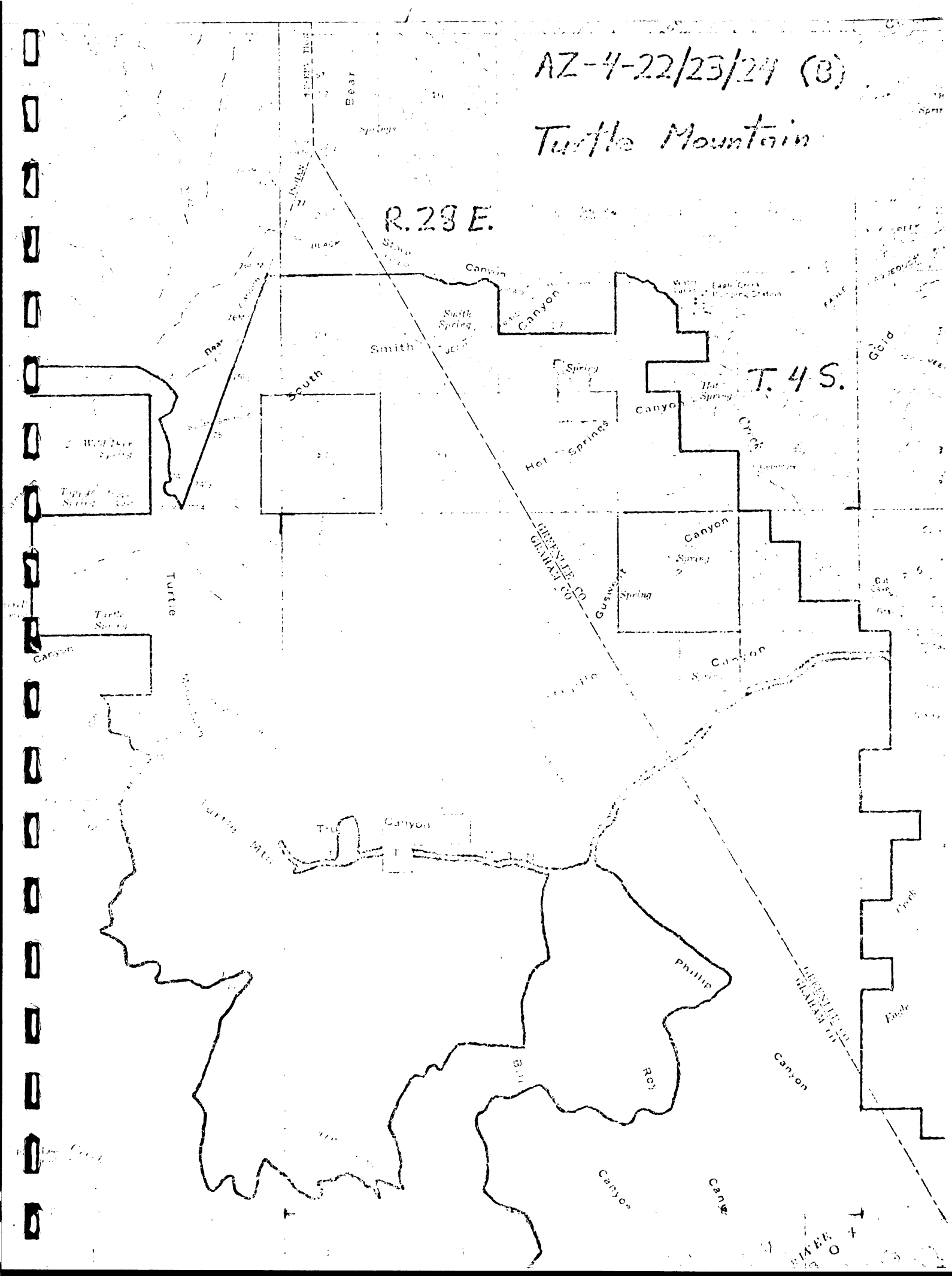
contact, dotted where inferred

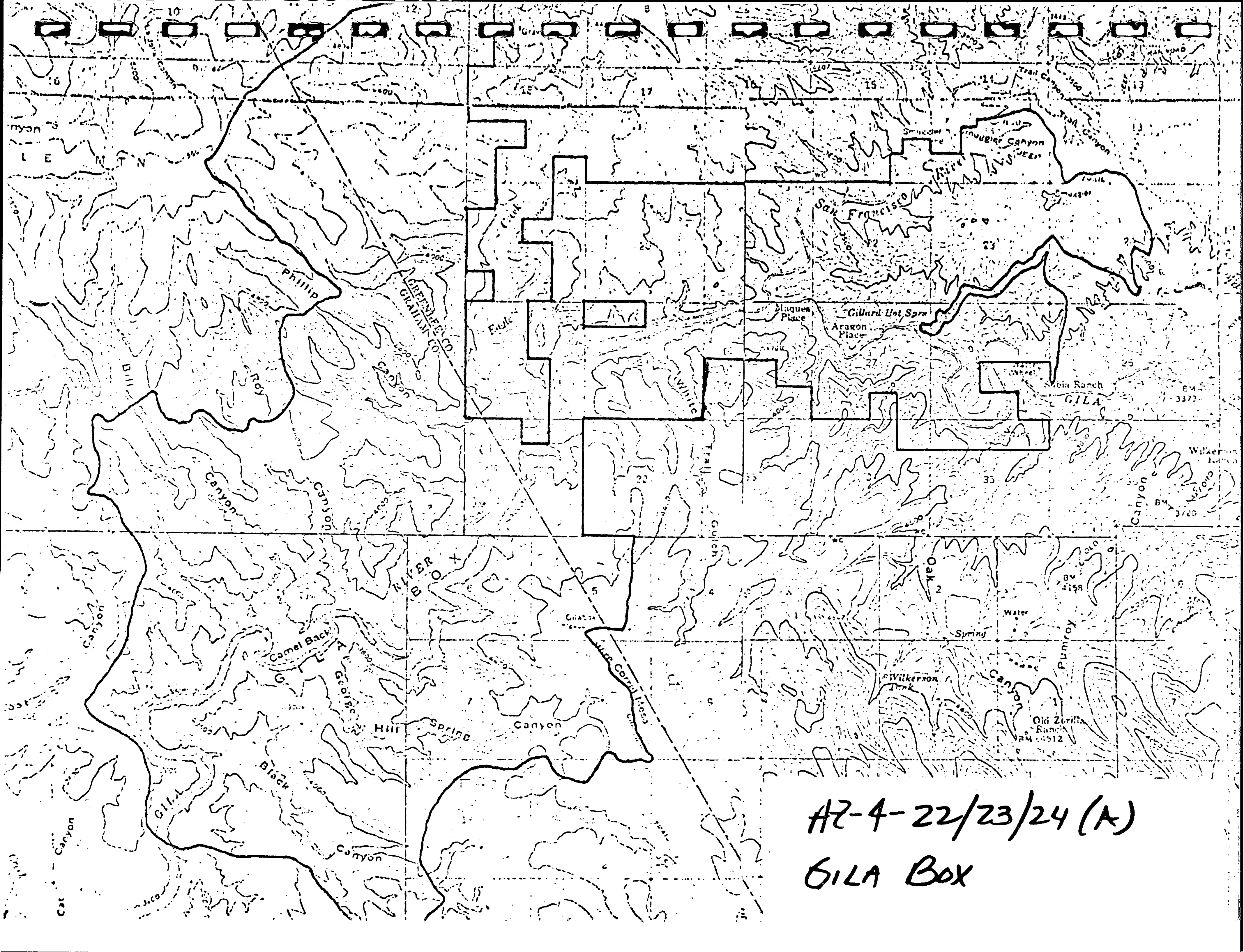
fault, dashed where inferred or covered

Sources of information include:

Lindgren, W., 1905, pl. 1
Richter, D.A., and V.A. Lawrence, 1981
Wilson, E.D., and R.T. Moore, 1958
Wynn, J.C., 1981


COPPER MOUNTAIN
SQUARE BUTTE
GREENLEE COUNTY
GRAHAM COUNTY
Safford
Hollywood
Lone Star
Solomon
San Jose
Buena Vista
Solomon Siding
Water
Scale 1 250,000
20 Statute Miles
30 Kilometers
10 Nautical Miles
CONTOUR INTERVAL 200 FEET


AZ-4-22/23/24 (8)
Turtle Mountain
R. 23 E.
T. 4 S.
Bear
Canyon
Smith
South
Hot Springs
Gusseri
Turtle
Phillip
Canyon



AZ-4-22/23/24 (A)
GILA BOX

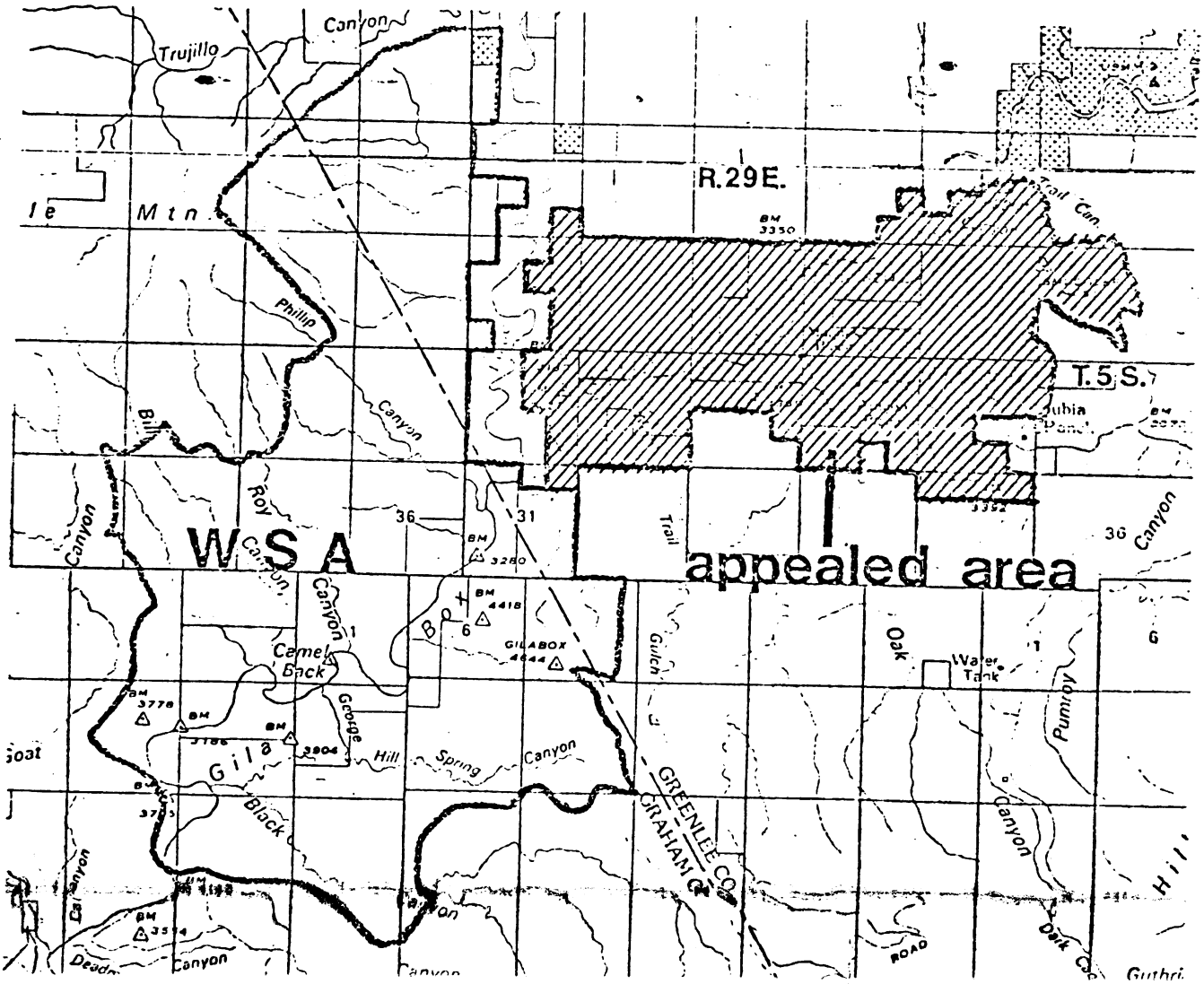
WILDERNESS UPDATE

A recent development in the Safford District's Wilderness Study has prompted the inclusion of this announcement with the attached letter.

An area contiguous to the Gila Box Wilderness Study Area (WSA), AZ-4-22/23/24(A), will be included in the district wilderness study to determine lands suitable for wilderness status. This area, approximately 6,152 acres, was dropped from further wilderness consideration on November 14, 1980. That decision, however, was appealed. The appeal is now in the hands of the Interior Board of Land Appeals. The final decision of this area will depend on the Board's ruling, expected in the near future.

Since there exists a possibility the decision to drop this area could be changed, this area will be included in our ongoing wilderness study. More efficient use of money, time, and manpower can be obtained by studying this area along with the WSA. If our previous decision is changed, we would not have to add this area to our study at a much later date. If the decision is not changed, this area would simply be dropped from the study.

The map below will show you the location of this area with respect to the Gila Box WSA. If you have any questions on this matter, please contact the Safford District Office at 425 E. 4th St., Safford, Arizona 85546 or call (602) 428-4040.



KNOWN MINERAL OCCURRENCES

TURTLE MOUNTAIN - GILA BOX - APPEALED AREA (4-22/23/24 A,B)

Copper, Manganese, Gold, Silver, Gravel, Cinder, and Geothermal Deposits

The Turtle Mountain - Gila Box region, located in the northern Peloncillo Mountains, is chiefly composed of volcanic and volcaniclastic rocks (late Tertiary - Quaternary; about 30-2 m.y.). The majority of these flows and associated pyroclastics consist of massive andesites and basaltic andesites, referred to as the Turtle Mountain - Guthrie Peak andesite flow (Oligocene-Miocene) and the older Gila River flow (Oligocene). Intercalated with these andesitic units are rhyolitic pyroclastic ash-flows and air-falls, rhyolitic dikes, and dacite flows. Basins flanking the Peloncillo Mountains contain coarse volcaniclastic sedimentary rocks and modern basin-fill deposits associated with the Gila and San Francisco river drainages.

Two large porphyry copper areas lie within 10 km. to the southwest and northeast of the northern Peloncillo Range. In the Gila Mountains to the west, porphyry copper and related copper vein deposits are associated with small granodiortie plutons (late Cretaceous-early Tertiary; 67-52 m.y.) emplaced along ENE-trending shear zones in Tertiary (70 m.y.) andesite flows and breccias. In the Clifton-Morenci area to the east, granodiorite-quartz monzonite-diorite intrusives (56-55 m.y.) and associated copper porphyry deposits underlie Precambrian granite and Paleozoic-Mesozoic sedimentary and igneous rocks (map numbers 2, 4, 5, 9).

Disseminated and vein deposits of copper also occur within fissure veins in the Turtle Mountain - Guthrie Peak andesite and basaltic andesite complex (map numbers 12-16). Copper deposits are associated with silver, zinc, gold lode, lead-manganese ore, and placer gold.

Large irregular pockets of silver are found as fissure vein replacement deposits in the Clifton - Morenci area (ie: map number 7). Silver, in association with gold and copper minerals, is found in shear zones cutting massive cherty limestones (Ordovician-Carboniferous) and Cambrian quartzites.

Irregular deposits of gold are contained in limonite along well-defined fissure veins in limestone in the Clifton - Morenci area (map numbers 6,8) and in veins cutting Tertiary andesite volcanics in the Safford - Lone Star area (map number 15).

Placer gold (map numbers 2,7,9,10,17,18,21,23) has been recovered from Quaternary river gravels resting in Gila Conglomerate in curves of the Gila and San Francisco rivers. Placer gold is derived from small gold-bearing veins in the Clifton - Morenci area, and was actively mined from the early 1880's until the early 1900's when mining claim areas became exhausted. Fine flakes of gold are associated with ferruginous chert pebbles and black sand.

Map numbers 11 and 20 contain manganese deposits and associated barite and placer gold. Manganese minerals, chiefly pyrolusite and wad, are confined to irregular pockets in shear zones within Gila Conglomerate (map number 20) and granite porphyry (map number 11).

The Gila River contains alluvial and volcaniclastic sedimentary basin-fill deposits of economic value. Beds of pumicite, cinders, gravel, and perlite have been actively mined since the mid-1900's (map numbers 22, 25,27,30). Geothermal areas (map numbers 3,19) occur on contacts between basin-fill deposits and volcaniclastic units (Oligocene-Miocene).

Earliest mining activity in the area occurred in the Copper Mountain District (Clifton - Morenci) during the 1870's. Total production within this district from 1873 to 1979 was 680,460,916 short tons (including 11,360,088,031 lbs. copper). Total production within the Lone Star District (Safford) from 1903 to 1966 was 5491 short tons (including 246,475 lbs. copper).

MAP NO. 4- 22/23/24 - 1

Mine . Toppey's Cave

Location T.04S Sec. 36 Lat. 33-02-10N
R.27E SE Long. 109-31-12W
Elev. 6480 ft.

Geology Prospect located in andesite and basaltic andesite of the Turtle Mountain - Guthrie Peak region (Miocene-Oligocene). Andesite flow characterized by fine-grained, sparsely porphyritic texture; locally includes beds of volcanic boulder conglomerate.

Mineral Products Unknown.

Development and Production Underground exploration prospect; extent of development unknown.

References

USBM Files, Toppey's Cave
USGS Bryce Mountain Quad (1:62500)
Richter and Lawrence, 1981

MAP NO. 4- 22/23/24 - 2

Mine Gold Belt Mines
(Eagle Gold and Copper Claims, Dover Copper Group)

Location T.04S Sec. 13 Lat. 33-05-00N
R.28E NW of SE, NE, SW Long. 109-25-24W
Elev. 4640 ft.

Geology Secondary copper deposits in irregular pockets in well-defined fissure vein striking N45W and paralleling granite porphyry dike (Tertiary) in basaltic lava flow (Tertiary). Surface oxidation forms gossans over central ore body; copper lies in streaks with manganese ore. Maximum width of orebody, 10 ft.

Mineral Products copper: chrysocolla, malachite, chalcocite
silver
gold placer
lead : sphalerite, galena, cerussite
manganese : pyrolusite

Development and Production 20 patented claims located in 1904; operated (as of 1957) by Dover Copper Mining Co. Development included 8 shafts, several tunnels, 5-stamp gold mill. All 700 ft. of known orebody was connected by drift workings. Gold placer gravels have been mined in Copperplate Gulch since the early 1880's. Mined 3814 short tons of ore between 1907 and 1947 (includes 820 tons of copper ore).

References

ABGMT CRIB Data, 1981
USGS Clifton Quad (1: 62500)
BLM Mining District Sheet 840
Mines Handbook, 1918, p. 473
ABGMT Clippings, Dover Copper Mining Co.
ADMR Dover Copper Group File
Lindgren, 1905
Johnson, M.G., 1972, p. 15-16

MAP NO. 4-22/23/24 -3

Mine Eagle Creek Spring

Location T.04S R.28E Sec. 35 N½ Lat. 33-02-48N Long. 109-28-46W Elev. 4000 ft.

Geology Hot springs located on contact between andesite and basaltic andesite of Turtle Mountain - Guthrie Peak region (Oligocene-Miocene) and Gila Conglomerate and associated younger basin-fill deposits (Miocene - Pleistocene). Andesite unit locally contains beds of volcanic boulder conglomerate and lenses of pyroclastic scoria; rocks are fine-grained and locally porphyritic. Gila conglomerate contains tuffaceous, gravel to boulder volcanic conglomerate in lower part, and semi-indurated volcanic conglomerate with gravel, sand, silt, and clay deposits of alluvial and lacustrine origin in upper part. Hot-water convection system.

Mineral Products geothermal

Development and Production Surface workings in vicinity of hot springs. 2 springs with surface temperatures averaging 36°C and subsurface temperatures of 115°C. Covers subsurface area of 1.5 sq. km.

References

USBM Files, Eagle Creek Spring
USGS Clifton Quad (1:62500)
Richter and Lawrence, 1981
Rennner, et.al, 1975, 1981
Lindgren, 1905, pl. 1

MAP NO. 4-22/23/24 - 4

Mine Coronado Mine
(Horseshoe Shaft, Arizona Copper Co. Group)

Location T.04S R.29E Sec. 6 E½ Lat. 33-06-42N Long. 109-23-52N Elev. 5750 ft.

Geology Secondary copper minerals, chiefly chrysocolla and malachite, form replacement seams along major E-W trending fissure fault between coarse-grained granite on north, and quartzite and quartzitic conglomerate on south (late Precambrian-Cambrian). Associated with dark-green diabase dike (Cretaceous-Tertiary). Process of concentration by surface oxidation to 400 ft. depth and secondary enrichment. Reported occurrence of zinc and manganese in fault fissure system.

Mineral Products copper: chalococite, chrysocolla, malachite, azurite, libethenite, pyrite
manganese: coronadite
zinc

Development and Production Developments included 3200-ft.-long Coronado Incline and 1-mile long tramway connecting mine and Chase Creek; 9400 ft. long adit; 3 shafts with maximum depth of 1100 ft; one open cut located one mile to west of main shafts and in Horseshoe Gulch; and several winzes and stopes. 3 patented claims located in 1874 and presently owned by Phelps Dodge Corp. Several thousand tons of ore mined prior to 1921 (Arizona Copper Co. Ltd., Coronado Mining Co).

References

ABGMT CRIS Data, 1981
Lindgren, 1905, p.338-344
USBM Files, Coronado Mine
BLM Mining District Sheet 840
USGS Clifton Quad (1:62500)
Langton, 1973, p.256
Copper Handbook, 1911, p.356-57
Mines Handbook, 1918, p. 470-71

MAP NO. 4-22/23/24 - 5

Mine Dover Copper Group (mines: Keating, Dover, Tucky, Margot, Gold Belt; Bell Group; St. Joe Group; Anita Group; Margot and Tucky Group; Keating Group; Gold Belt Group)

Location T.04S, R.29E, Sec. 7, NW of NW
T.04S, R.29E, Sec. 6 SW
Lat. 36-06-20N Long. 109-24-55W Elev. 5280 ft.

Geology Irregular copper deposits in NE-trending small fault fissure between granite (Tertiary) on the south and quartz monzonite porphyry (Tertiary; 55.2 ± 1.7 m.y.) on the north. Porphyry cut by NE-trending diabase and granite porphyry dikes. Extensive surface leaching, oxidation, and formation of gossans. Workings also located on late Tertiary replacement veins in Longfellow Limestone (Ordovician) in vicinity. Maximum width of ore bodies, 18 ft.

Mineral Products

copper - malachite, chrysocolla, pyrite, covellite, chalcocite, azurite, chalcopyrite

silver
gold
lead - manganese ore

Development and Production 136 patented claims owned by Dover Copper Mining Co. (as of 1957). Developments included 5 underground mine workings; most productive mine was the Keating Mine, worked by 2 250-ft. shafts, several tunnels, and 3 winzes of 10 to 119 ft. Mined 21,681 short tons of ore between 1913 and 1945.

References

ABGMT CRIB Data, 1981
USGS Clifton Quad (1:62500)
Bennett, 1975 (age dates)
ABGMT - USBM File Data
ADMR Dover Copper Group File
Copper Handbook, 1911, p. 616
Lindgren, 1905, p. 344-45
USBM Files, Dover

MAP NO. 4-22/23/24 - 6

Mine Buzzard's Shadow Mine

Location T.04S R.29E Sec. 19 NW Lat 33-04-18N Long. 109-24-24W Elev. 4800 ft.

Geology Irregular and tabular deposits of gold in E-NE trending fissure veins, cutting massive cherty Longfellow Limestone (Ordovician) alternating with beds of Morenci Shale (Devonian). Well-defined fissure vein lies between crushed limestone stained by manganese in the hanging wall and Morenci Quartz-Monzonite Porphyry (Tertiary; 55.2± m.y.)

Mineral Products gold lode, silver, copper, manganese

Development and Production 12 claims patented by Home Copper Co. in 1901. Developments included several shafts, tunnels, stopes, drifts, and free milling of gold ore on surface. Produced 2589 short tons of ore (224 oz. of gold included) between 1904 and 1915.

References

ABGMT CRIB Data, 1981
Lindgren 1905, p. 297
Copper Handbook, 1911, p. 1293-1294
Copper Handbook, 1912-1913, p. 444
Bennett, 1975 (age dates)
USGS Clifton Quad (1:62500)
ABGMT - USBM File Data

MAP NO. 4-22/23/24 - 7

Mine: New York and Arizona Gold Mines
(Cansler Mine, Buzzard Shadow Group)

Location: T.04S R. 29E Sec. 19 NW Lat. 33-04-20N Long. 109-24-34W Elev. 4680 ft.

Geology: Irregular deposits of base and precious metals in NE - trending fissure veins cutting massive cherty limestones (Ordovician) and underlying quartzites. Alternating sandstone and shale-beds form irregular areas almost entirely surrounded by Morenci Granite Porphyry (Tertiary; 55-56 m.y.) Contact metamorphic replacements and secondary enrichment along margin of intrusives. Major vein deposit is silver; gold occurs free, as well as combined in copper and iron sulfides; occurrences of lead and manganese minerals reported. Maximum width of vein deposit 48 inches.

Mineral Products
silver
copper
placer gold
lead
manganese

Development and Production: 30 unpatented claims totalling 600 acres; claims located in 1901 by Home Copper Co. Property included four ore bodies, of which the Buzzard Shadow is the easternmost. Developments included 4 tunnels (lengths 1800, 600, 450, and 100 ft.), 5 shafts (maximum depth 260 ft.), small stopes and pits, and free-milling gold ore on surface. Length of workings 5000 ft. Mined 219 short tons of ore between 1921 and 1937.

References
ABGMT CRIB Data, 1981
USGS Clifton Quad (1:62500)
Bennett, 1975 (age dates)
Lindgren, 1905
Copper Handbook, 1911, 1293-94
Copper Handbook, 1912-1913, p. 444
ADMR New York and Arizona Group File
ABGMT Clippings, New York and Arizona Gold and Copper Co.
ABGMT - USBM File Data

MAP NO. 4-22/23/24 - 8

Mine: Bell and Pinkard Group
(Bell Group, Dover Copper Group Claims)

Location T.04S R.29E Sec. 19 N½, N½ of SW Lat. 33-04-09N Long. 109-23-55W Elev. 4400 ft.

Geology Irregular deposits of gold are contained in limonite along E-NE trending, well-defined veins in Longfellow Limestone (Ordovician). Minor secondary enrichment of copper associated with vein deposits; limestone greatly alterred to epidote and magnetite with copper stains and pyrite. Principal intrusions occurred parallel to planes of sedimentation, which dip 10°-30° SW. Quartz monzonite porphyry dikes cut area (Tertiary; 51.3±.9 m.y.).

Mineral Products gold lode, silver, copper, lead, zinc

Development and Production Surface and underground workings; extent of development and production unknown. Owned by Dover Copper Mining Co. (as of 1957). Production data included with general data for Dover Copper Mining Co.

References

ADMR Dover Copper Mine File
BLM Mining District Sheet 840
Lindgren, 1905, p.292-298
USGS Clifton Quad (1:62500)
ABGMT Clippings, Dover Copper Mining Co.
ABGMT CRIB Data, 1981
Bennett, 1975 (age dates)

MAP NO. 4-22/23/24-9

Mine Lakeman Group

Location T.04S R.29E Sec.19 Cen, S½ Lat. 33-03-54N Long. 109-24-20W Elev. 4340 ft.

Geology Irregular deposits of copper minerals and gold lode in fissure vein striking N60E and cutting diorite porphyry associated with Morenci porphyry stock (55-56 m.y.). Placer gold and silver carried in sulfides; process of concentration through secondary enrichment. Placer gold in Gold Gulch derived from oxidized, gold-bearing veins associated with intrusive porphyry rather than with regional faulting. Auriferous and argentiferous pyrite finely disseminated in country-rock.

Mineral Products
copper
gold lode, gold placer
silver
lead: hematite, galena

Development and Production 8 patented claims totalling about 138 acres, located in late 1800's. Developments included one main shaft 300 ft. deep, 2 short tunnels with lengths of 30 ft and 40 ft, about 470 ft of drifts, an additional shaft, one stope, various shallow cuts and pits, placer gold workings. Produced 1113

short tons of ore between 1904 and 1935 (including 3312 lbs. of copper, 3947 oz. of silver, 32 oz. of gold, 250 lbs. of lead).

References

ABGMT CRIB Data, 1981
USGS Clifton Quad (1:62500)
Bennett, 1975 (age dates)
ABGMT-USBM File Data
BLM Mining District Sheet 841
USBM Files, Lakeman Group
ADMR Lakeman Group File
ABGMT Clippings; Lakeman Group,
Messabi-Morenci Mining Co.
Lindgren, 1905, p. 292-96

MAP NO. 4-22/23/24 - 10

Mine Gold Gulch Placers

Location T.04S R.29E, R.28E Sec. 19,25,30 Lat. 33-03-40N Long. 109-24-31W Elev. 4000 ft.

Geology Irregular deposits of gold contained in limonite along NE-trending fissure veins in diorite porphyry (Tertiary; 5-56 m.y.) or between porphyry and limestone masses (Ordovician-Mississippian). Concentrated as free gold in sand bars along Pinkard and Gold gulches; forms pockets and occurs as dispersed flakes. Commonly found along porphyry-sediment contact.

Mineral Products placer gold

Development and Production Located in 1870 and exhausted by 1905. Free milling operations. See also: Lakeman Group, Bell and Pinkard Group, Corporate and Climax Claims (all mined placers in early 1900's).

References

ABGMT CRIB Data, 1982
USGS Clifton Quad. (1:62500)
Bennett, 1975 (age dates)
Lindgren, 1905, p. 211-12, 292-98
Johnson, M.C., 1972, p. 15-16
Wilson et.al, 1967, p. 185

MAP NO. 4-22/23/24 -11

Mine Corporate and Climax Claims

Location T.04S R.29E Sec. 29 SW Lat. 33-03-10N Long. 109-23-19W Elev. 4640 ft.

Geology Manganese minerals confined to irregular bands within prominent NW-trending, vertical quartz fissure veins cutting granite - quartz-monzonite - diorite porphyry (Tertiary; 55-56 m.y.). Gold occurs as placer deposits and in pockets along irregular veins in porphyry, near contact with Pinkard Formation shales (Cretaceous). Manganese minerals are exposed in the vein for about 400-500 ft. along surface.

Mineral Products

manganese: pyrolusite, wad-type oxides
gold placers

Development and Production Corporate Group consists of 5 continguous claims; Climax Claim lies adjacent to east. Developments included a 20 ft. cut in the vein on Climax Claim; shaftlike pit and 70 ft. adit on Corporate Claims. Located as gold placer claims in 1932; re-located as manganese claims in 1951.

References

ABGMT CRIB Data, 1982
USGS Clifton Quad (1:62500)
Bennett, 1975 (age dates)
Farnham, et al., 1961, p. 103
USBM Files, Corporate Group, Climax Claim
Lindgren, 1905, p. 229-30, 296
Johnson, M.G., 1972, p. 15-16
Wilson, et al., 1967, p. 185

MAP NO. 4-22/23/24-12

Mine Blue Star Claims

Location			
	T.05S	Sec. 17	Lat. 33-00-00N
	R.26E	NE	Long. 109-35-23W
			Elev. 4800 ft.

Geology Located on or near major NW-SE trending normal fault cutting Quaternary-Tertiary sediments to west, and andesite and basaltic andesite flows of Miocene-Oligocene age to north. Volcaniclastic rocks are fine-grained and locally sparsely porphyritic, containing beds of volcanic boulder conglomerate and lenses of pyroclastic scoria. Sedimentary beds contain Gila Conglomerate and younger basin-fill deposits of sand, gravel, silt and clay.

Mineral Products

copper

Development and Production Exploration prospect; extent of development unknown.

References

USBM Files, Blue Star Claims
USGS Safford Quad (1:62500)
BLM Mining Claims Lead File 40084, July 1980
USGS Bryce Mtn. Quad (1:62500)
Wynn, 1981
Richter and Lawrence, 1981

MAP NO. 4-22/23/24 - 13

Mine Mary Claims

Location T.05S R.26E Sec. 13 SW Lat. 32-59-35N Long. 109-38-15W Elev. 5000 ft.

Geology Secondary copper minerals in narrow, fissure veins at or near contact between Cretaceous-Tertiary andesite flow to south and Tertiary basaltic dome complex to north.

Mineral Products copper

Development and Production Exploration prospect; extent of development unknown.

References

USBM Files, Mary Claims
USGS Safford Quad (1:62500)
BLM Mining Claims Lead File 84084, July 1980
Wynn, 1981

MAP NO. 4-22/23/24 - 14

Mine Bear Springs Claims (Lula Belle)

Location T.05S R.26E Sec.24,25 SE Lat. 32-58-35N Long. 109-37-30W Elev. 4800 ft.

Geology Secondary copper minerals, chiefly chrysocolla, in narrow fissure veins cutting Cretaceous-Tertiary andesite volcanics. Fine-grained massive andesite flows separated by thick flow breccias.

Mineral Products copper: chrysocolla

Development and Production Exploration prospect; extent of development unknown.

References

USBM Files, Bear Springs Claims
USGS Safford Quad (1:62500)
BLM Mining Claims Lead File 42662, 35507, July 1980
Wynn, 1981

MAP NO. 4-22/23/24-15

Mine Ben Hurr
(Lola Dean, Christmas Gift, Walnut Group, Steeple Rock)

Location T.05S R.26E Sec. 36 NE Lat. 32-57-33N Long. 109-37-48W Elev. 4800 ft.

Geology Secondary copper minerals in narrow fissure veins (N75E, 85°S) cutting Tertiary andesite volcanics. Vein parallels contact between andesite and brecciated felsic dike. Quartz veins in area contain gold and silver. 18 inch vein outcrops for ¼ mile.

Mineral Products

copper: chrysocolla
silver
gold

Development and Production Surface-underground operations; inactive producer (as of 1980). Developments included one shallow shaft and several trenches. Mined 3 short tones of ore (includes 1700 lbs. of copper ore) between 1951 and 1954. 6 unpatented claims, extending into Sec. 25,26, and 35 (T.05S, R.26E).

References

USBM Files, Ben Hurr
USGS Safford Quad (1:62500)
ADMR Walnut Group File
ADMR Ben Hurr Mine File
BLM Unpatented Claims Lead File 26703, 1879, July 1980
ABGMT - USBM File Data
USBM Files, Steeple Rock

MAP NO. 4-22/23/24 - 16

Mine Jet Group (Towne Mines Property - Bug unpatented claims, unpatented claims - Jupiter, Saturn, Venus)

Location T.05S R.27E Sec. 21 Cen. Lat. 32-59-00N Long. 109-35-00W Elev. 4800 ft.

Geology Copper deposits of unknown type in massive andesite and basaltic andesite flows associated with the Turtle Mtn. - Guthrie Peak region (Oligocene-Miocene). Deposits probably in fissure veins associated with faults and basaltic andesite dikes of roughly same age. Rocks are fine-grained, olivine-rich, and locally sparsely porphyritic. Unit contains beds of volcanic boulder conglomerate and lenses of pyroclastic scoria, with scoriaceous upper and lower beds. Primary copper minerals in adjacent Lone Star district (to west) consist mainly of pyrite and chalcopyrite; copper minerals generally occur in veins and disseminations within this region.

Mineral Products copper

Development and Production Exploration prospects; extent of development and production unknown. Claims extend into Sec. 15, 17, 18, 19, 20, 21, 22, 23, 26, 27, 29, 30, 33, and 34 (T.05S, R.27E), and Sec. 1, 3, 10, 11, 12, 13, and 29 (T.06S, R. 29E).

References

USBM Files, Jet Group
USGS Safford Quad (1:62500)
BLM Mining Claims Lead File - 82532, July 1980
Wilson and Moore, 1958
Richter and Lawrence, 1981
Robinson and Cook, 1966

MAP NO. 4-22/23/24 -17

Mine Claims M.S. 2448
(Claims M.S. 458)

Location T.05S R.29E Sec. 12 NW, SE Lat. 33-01-05N Long. 109-20-00W Elev. 3640 ft.

Geology Fine flakes of gold recovered from Morenci Gulch, from other tributary gulches of the San Francisco River, and from elevated gravels resting on Gila Conglomerate above present level of the San Francisco River. Placer gold is derived from oxidized gold-bearing veins associated with intrusive Morenci granite porphyry complex (55-56 my), and are commonly found along or near porphyry-sediment contact. Associated with black sand and abundant pebbles of magnetite, hematite, and limonite.

Mineral Products placer gold

Development and Production Exploration prospects; located in early 1870's mined through underground workings and treated in sluices and rockers at the river. Production data not available; extent of development unknown.

References

USBM Files, Claims M.S. 2448
USGS Clifton Quad (1: 62500)
BLM Mining District Sheet 843
Johnson, M.G., 1972, p. 15-16
Lindgren, 1905; pl. 1, p.101
Bennett, 1975 (age dates)
Wilson, E. D., 1961, p. 65-66

MAP NO. 4-22/23/24 - 18

Mine Smuggler Mine (Oro Fino)

Location T.05S R.29E Sec. 14 SW Lat. 32-59-43N Long. 110-20-55W Elev. 3360 ft.

Geology Fine gold contained in old river gravels resting on Gila Congolmerate (Pliocene-Pleistocene) in curves of the San Francisco River. Gravels in placer deposit are 3-12 ft. thick; carry some gold irregularly distributed throughout, but are generally richest at or near Gila Conglomerate bedrock. Associated with black sand and abundant pebbles of magnetite, hematite, and limonite.

Mineral Products placer gold

Development and Production Underground mining; gravels containing gold are treated in sluices and rockers at the river. Claims located in early 1870's; actively, prospected and developed during 1880's. Sluicing operations conducted in 1933. Production data and extent of development unknown.

References

USBM Files, Smuggler Mine
USGS Guthrie Quad (1:62500)
Richter and Lawrence, 1981
Lindgren, 1905, p. 101
Johnson, M.G., 1972, p. 17-18
Wilson, E.D., 1961, p. 65-67

MAP NO. 4-22/23/24-19

Mine Gillard Hot Springs

Location T.05S R.29E Sec. 27 Lat. 32-58-30N Long. 109-21-00W Elev. 3500 ft.

Geology 5 springs located on or near contact between Gila Conglomerate and younger basin-fill deposits (Quaternary - late Tertiary), and modern alluvium on active flood plain of the Gila River (Holocene-Recent). Older sediments capping low terraces consist of tuffaceous, gravel to boulder volcanic conglomerate in lower beds, and semi-indurated volcanic conglomerate with gravel, sand, silt, and clay deposits of alluvial and lacustrine origin in upper beds. Subsurface temperature 140°C; surface temperature of 5 springs averages 82°C.

Mineral Products geothermal

Development and Production Surface workings; extent of development unknown.

References

USBM Files, Gillard Hot Spring
USGS Guthrie Quad (1:62500)
Richter and Lawrence, 1981
Renner, et.al., 1975, p. 26-27

MAP NO. 4-22/23/24 - 20

Mine Gila Hot Springs Group
(Pyrolusite Claims, Pyrolusite No. 1 Claim, Hult Pyrolusite Property)

Location T.05S R.29E Sec. 26 NE Lat. 32-58-02N Long. 109-19-35W

Geology Manganese ore occurs in lenses and short irregular pods along narrow fractures in Gila Conglomerate (Pliocene-Pleistocene).

Fractures strike about N5W and cut gently dipping sedimentary beds at high angles. Two most extensive deposits are located on the northernmost and southernmost fractures; veins occasionally outcrop on surface. Associated with trace amounts of barite.

Mineral Products manganese : wad, pyrolusite
barite ($BaCO_3$)

Development and Production Surface and underground operations; presently inactive. Located in 1938 by W.A. Hult. Property consists of 4 unpatented claims. After several years of initial development work, claims were abandoned; claims were later relocated in 1954 by H.J. Peters.

References

USBM Files, Gila Hot Springs Claim
ABGMT CRIB Data, 1981
USBM Files, Pyrolusite No. 1
USGS Guthrie Quad (1:62500)
Farnham et.al, 1961, p. 98-99
ADMR Pyrolusite No. 1 Lode
Mining Claim File

MAP NO. 4-22/23/24 - 21

Mine: Claims M.S. 1654 B
(Petaluma, Rex Monte, Waterloo, Argyle, Napoleon, Glasgow)

Location: T.05S, R. 30E; Sec. 6 Cen.; Lat. 33-01-43N, Long. 109-17-51W, Elev. 3600 ft.

Geology: Fine flakes of gold in ancient river gravels resting on Gila Conglomerate (Pliocene-Pleistocene) in curves of the San Francisco River. Placer gold is derived from small gold-bearing veins, associated with Morenci granite porphyry dikes (55-56 my) that are exposed in Dorsey and Colorado Gulches, and from small gold veins around Morenci.

Mineral Products: placer gold

Development and Production: Exploration prospects; extent of development unknown.

References

USBM Files, Claims M.S. 16548 B
USGS Clifton Quad (1:62500)
BLM Mining District Sheet 843
Johnson, M.G., 1972, p. 17-18
Wilson, 1961, p. 65-67
Lindgren, 1905, pl.1
Bennett, 1975 (age dates)

MAP NO. 4-22/23/24-22

Mine: Arizona Department of Transporation Gravel Pit.

Location: T.05S, R.30E; Sec. 25 Cen.; Lat. 32-58-08N, Long. 109-12-34W, Elev. 3760 ft.

Geology: Gravel, sand, silt, and clay deposits of alluvial and lacustrine origin (Quaternary - late Tertiary) covering exposed andesite flows of the Gila River Valley (Oligocene). Sedimentary unit includes tuffaceous, gravel to boulder volcanic conglomerate in lower beds and Gila Conglomerate in upper beds. Massive andesite flow reaches thicknesses of 760 ft. and extends from Morenci region to Guthrie, east of Turtle Mtn.

Mineral Products: Sand and gravel

Development and Production: Surface workings; active producer.

References

USBM Files, ADOT Gravel Pit
USGS York Valley Quad (1:62500)
Richter and Lawrence, 1981
Wynn, 1981

MAP NO. 4-22/23/24 - 23

Mine Dorothy B. Claims (Gold Spot, Banner, Bonny, Red Bird, Gold Nugget, Neel Placers)

Location T.06S, R. 28E; Sec. 16; Lat. 32-54-37N, Long. 109-29-06W, Elev. 3440 ft.

Geology Gold placer found in Quaternary - late Tertiary river gravels that mantle terraced bluffs of Gila Conglomerate along Gila River and cover large alluvial flat at confluence of Bonita Creek and Gila River. Gold ranges in size from flakes to wiry particles about 1/4 inch long. Associated with ferruginous chert pebbles and black sand. Gravel deposits average 23-30 ft. thick.

Mineral Products

sand and gravel: containing platinum, iridium, osmium, zircon, silicon, monasite
placer gold
iron

Development and Production Exploration prospect; mining and milling facilities constructed in 1980. First claims located in early 1900's; worked intermittently to present. Development included 14 bulldozer trenches of varying depths and with lengths of 400-500 ft. 130 claims totalling 2500 acres; claims extend into Sec. 17, 18, 19, 21, 23, and 28 (T.065, R.28E). Operators included Mammoth, Schwimmer Mining Co., Rio Gila Gold Mining Co., Neel Placer Co.

References

ABSMT Clippings File/ Neel Placers, Rio Gila, Gold Mining Co.
USBM Files, Dorothy B. Claims
USGS Guthrie Quad (1:62500)
ADMR Neel Placers File
BLM Unpatented Claims Lead File 42716, July 1980
USGS Safford Quad (1:62500)
Wilson, E.D. 1961
Richter and Lawrence, 1981
Johnson, 1972, p. 18-20
USGS CRIB Data, 1979

MAP NO. 4-22/23/24 -24

Mine Prospects

Location T.06S, R. 28E; Sec. 22, N½ of NW; Lat. 32-54-08N, Long. 109-28-13W, Elev. 3440 ft.

Geology Prospects located in Pleistocene terrace deposits chiefly composed of rounded boulders and gravel. At or near contact of coarse terrace deposits with Gila Conglomerate and associated sand, silt, and clay basin-fill deposits (Quaternary-late Tertiary). Conglomerate beds are massive, poorly sorted, and contain clasts primarily of local volcanic origin.

Mineral Products Unknown.

Development and Production Exploration prospect; extent of development unknown.

References

USBM Files, Prospects
USGS Guthrie Quad (1:62500)
Richter and Lawrence, 1981

MAP NO. 4-22/23/24 25

Mine Pumice No. 2

Location T.06S R.28E Sec. 30 Lat. 32-52-41N Long. 109-30-18W Elev. 3000 ft.

Geology Red basaltic andesite cinder and white rhyolite pumice (middle Tertiary) form pyroclastic deposits in andesite and basaltic andesite flow of the Turtle Mtn. - Guthrie Peak region (Middle Tertiary). Andesite flow rocks are fine-grained and locally sparsely porphyritic. Locally includes small units of sedimentary rocks.

Mineral Products pumice
perlite

Development and Production Surface workings; active producer. Operated by Gila Valley Block Co. Extent of development and production unknown.

References

USBM Files, Pumice No. 2
USGS Safford Quad (1:62500)
Wynn, 1981
Wilson and Moore, 1958
Richter and Lawrence, 1981

MAP NO. 4-22/23/24 -26

Mine Prospects

Location T.06S R.28E Sec. 28 SW Lat. 32-52-33N Long. 109-29-30W Elev. 3440 ft.

Geology Prospects located in Gila Conglomerate and younger basin fill deposits (Quaternary-late Tertiary). Gila consists of boulder volcanic conglomerate in lower beds, and cemented volcanic conglomerate with gravel, sand, silt, and clay deposits of alluvial and lacustrine origin in upper beds. Conglomerate beds are massive and poorly sorted.

Mineral Products unknown

Development and Production Exploration prospects; extent of development unknown.

References

USBM Files, Prospects
USGS Guthrie Quad (1:24000)
Richter and Lawrence, 1981

MAP NO. 4-22/23/24 - 27

Mine Cinder Pits

Location T.06S R.29E Sec. 29;28 SE; SW Lat. 32-52-34N Long. 109-23-42W Elev. 4560 ft.

Geology Cinder pit located on contact between pyroclastic air-fall and volcaniclastic sedimentary deposits (Miocene or Oligocene) to north, and andesite and basaltic andesite of the Turtle Mountain-Guthrie Peak region (Miocene and Oligocene) to south. Volcaniciclastic sediments contain thin-bedded, fine-grained vitric tuff; includes lithic-pumice sandstone and locally, massive and poorly sorted volcanic boulder conglomerate beds.

Mineral Products pumice; volcanic cinder

Development and Production Surface workings; active producer. Extent of development and production unknown.

References

USBM Files, Cinder Pit
USGS Guthrie Quad (1:62500)
Richter and Lawrence, 1981

MAP NO. 4-22/23/24 - 28

Mine Mine

Location T.06S R.29E Sec.29 NW of NW Lat.32-53-13N Long. 109-24-21W Elev. 4640 ft.

Geology Prospect shaft located in andesite and basaltic andesite flow complex of the Turtle Mtn. - Guthrie Peak region (Miocene-rhyolite flow (Miocene). Rhyolite is flow-laminated and crystal-poor, intermixed with masses and lenses of dark-gray vitrophyre.

Mineral Products Unknown.

Development and Production Underground operations, extent of development unknown.

References

USBM Files, Mine
USGS Guthrie Quad (1:62500)
Richter and Lawrence, 1981

MAP NO. 4-22/23/24-29

Mine New Deal

Location T.07S R.28E | Sec. 01 E½ | Lat. 32-51-08N Long. 109-25-40W Elev. 3680 ft.

Geology Prospects located in unconsolidated to weakly - consolidated silt, sand, and gravel (Quaternary) on low-lying terraces and stream overflow channels along upper reaches of Yuma Wash (tributary of the Gila River).

Mineral Products
unknown

Development and Production Exploration prospect; extent of development unknown. Claims extend into Sec. 6,7 and 12 (T.07S, R.28E).

References
USBM Files, New Deal
USGS Guthrie Quad (1:62500)
BLM Mining Claims Lead File 79741, July 1980
Wynn, 1981
Richter and Lawrence, 1981

MAP NO. 4-22/23/24-30

Mine Haigler Pumice Property
(C.N. Greer Pumice, Gila Cinder Mine, Gila Valley Block Co.)

Location T.07S R.29E | Sec. 06 all | Lat. 32-51-00N Long. 109-25-00W Elev. 3500 ft.

Geology Claims located on or near contact between pyroclastic air-fall and volcaniclastic sedimentary deposits (Miocene or Oligocene), and andesite and basaltic andesite of the Turtle Mountain - Guthrie Peak region (Miocene and Oligocene). Beds of pumicite and cinders overlain by volcanic ash and underlain by volcanic glass and tuff. Tuff in area is covered at higher elevations by amygdaloidal basalt. Shear cliff, 100 ft. high, exposes bed of pumicite; beds dip 5° - 10° N, and are 10-50 ft. wide, 10-50 ft. thick and are exposed for a distance of about 1.5 miles.

Mineral Products
pumice
volcanic cinder
pumicite

Development and Production Surface workings; active producer. As of 1963, producing approximately 5000 yds. per year, containing 10% pumice and 90% cinders and scoria. Original Haigler Pumice Property of 30(?) unpatented claims totalling 760 acres was divided in 1961;

340 acres sold to Gila Valley Block Co. (T.07S, R.29E, Sec. 07) and 320 acres retained by A.C. Haigler. Cinders and pumicite used in manufacturing of wallboard, plasters, and building blocks.

References

USBM Files, Haigler Pumice
USGS Guthrie Quad (1:62500)
ADMR Haigler Pumice File
Mining World, 1963, p. 38
Richter and Lawrence, 1981
Wynn, 1981

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